



CAIT

Center for Advanced Infrastructure & Transportation
Rutgers, The State University of New Jersey

QUARTERLY PROGRESS REPORT

Project Title:	Development of Airport Obstruction Identification System		
RFP NUMBER:		NJDOT RESEARCH PROJECT MANAGER: Ken Stevenson	
TASK ORDER NUMBER/Study Number: 115 / 4-26857		PRINCIPAL INVESTIGATOR: Patrick Szary	
Study Start Date: 01/1/2002 Study End Date: 12/31/2003		Period Covered: 3 rd Quarter 2002	

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
1. Literature Search	10%	0%	100%	10%
2. Develop criteria	5%	0%	100%	5%
3. Evaluate the cost effectiveness	8%	12.5%	87.5%	7%
4. Conduct laboratory experiments	5%	25%	25%	1.25%
5. Conduct laboratory/field experiments	15%	17%	50%	7.5%
6. Develop prototype software	25%	25%	25%	6.25%
7. Demonstrate field test system	5%	0%	0%	0%
8. Redesign a new prototype	5%	0%	0%	0%
9. Demonstrate prototype system	5%	0%	0%	0%
10. Train NJDOT personnel	7%	0%	0%	0%
11. Final Report	10%	0%	0%	0%
TOTAL	100%			37%

1. Progress this quarter by task:

- A. Images that were collected from the field demonstration which took place in Trenton on May 10 were processed by the software experts in Oakland University. They have collected some height data and recently generated a color map of tree heights. Actual data from the field need to be taken to compare the results.
- B. A meeting with NJDOT was held on June 11 where a new idea for data collection was proposed, which is the use of RC blimps instead of the RC helicopters. A comparison of the two methods was conducted and it was clearly shown that the blimp will face a major problem which is the mobilization and helium price. At the end, a green light was given for the RC helicopters.
- C. We made a last attempt to reconsider the use of LIDAR and laser technology by attending a presentation in Trenton (NJDOT) on Cyrax Technologies held by Leica Geosystems. The cost and ability to perform the scan on large areas remain the same major problems for this technology.
- D. The first step we took to start with the RC helicopter technology as data collection was the purchase of a new software called "RealFlight" which is an RC simulation for RC helicopters and planes. It is a pretty neat software which give us the real feeling and touch on how to fly the radio controlled crafts using the same radio control that we will use on the field.

Department of Civil and Environmental Engineering
623 Bowser Rd. Piscataway NJ 08854-8014
Tel : 732-445-0579 Fax: 732-445-0577

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2. Proposed activities for next quarter by task

- A. Collect all the necessary accessories to build the RC helicopter desired to collect data/pictures (Cameras, GPS servos,...)
- B. Work on the prototype software which will the 3-D data collector from the digital pictures.
- C. Possibility of performing a second field demonstration to acquire better images along with some actual data and fixed reference points to check the accuracy of the software.

3. List of deliverables provided in this quarter by task (product date)

- A. Two radio controlled simulation software for RC helicopters.

4. Progress on Implementation and Training Activities

“RealFlight” software is an excellent basic training for flying the RC crafts. The second step is to hire a professional pilot that will give flying lessons for NJDOT personnel.

5. Problems/Proposed Solutions

- A. Ability of the NJDOT personnel to learn to fly an RC helicopter because it is considered a difficult task.
- B. In order to get the best data from the images, shot from the RC helicopter need to be taken at constant heights which might be difficult to perform.

6. Budget Summary*

Total Project Budget(# of years)	2 Years	\$210,000.00
Total Project Expenditure to date		\$33,824
% of Total Project Budget Expended		16%
Task Order Number/Study Number:		115 / 4-26857
Current Task Order Budget (# of years)	Year 1 and 2	\$210,000.00
Actual Expenditure to date against current task order		\$33,824
% of current task order budget expended		16%

* These are approximate expended amounts for the project; these estimates are for reference only and should not be used for official accounting purposes. For a more accurate project accounting please review the quarterly invoice for this project.

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